25 (Twice Amended). A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a central frame fixed with respect to said housing and disposed in said pumping chamber;

a rotatable impeller disposed in said pumping chamber for rotation about said central frame;

a polarized electromagnetic means associated with said housing and said impeller for rotating said impeller about said central frame;

a plurality of diamagnets fixed with respect to said impeller;

a plurality of magnet means fixed with respect to said central frame, [and] in magnetic communication with said plurality of diamagnets, and oriented generally axially and radially with said plurality of diamagnets, to thereby stabilize said impeller in both the axial and radial directions by magnetic forces levitating said impeller.

Amend claim 28 as follows:

28. (Amended). The fluid pump of either claim 25[, 26] or 27 wherein said magnet means are selected from the group consisting of permanent magnets, solenoids and electromagnets.

Add the following new claims 40 - 78 as follows:

40. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a rotatable impeller disposed in said pumping chamber for rotation about an axis;

a polarized electromagnetic means associated with said impeller and said housing for rotating said impeller about said axis;

a plurality of diamagnets fixed with respect to one of said impeller and housing; and

a plurality of permanent magnets fixed with respect to one of said housing and said impeller, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize said impeller in both the axial and radial directions by magnetic forces levitating said impeller.

41. The fluid pump of claim 40 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

42. The fluid pump of claim 40 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in

opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

43. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a rotatable impeller disposed in said pumping chamber for rotation about an axis;

a polarized electromagnetic means associated with said impeller and said housing for rotating said impeller about said axis;

a plurality of diamagnets fixed with respect to housing; and

a plurality of permanent magnets fixed with respect to said impeller such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

44. The fluid pump of claim 43 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

45. The fluid pump of claim 43 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in

opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

46. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a rotatable impeller disposed in said pumping chamber for rotation about an axis;

a polarized electromagnetic means associated with said impeller and said housing for rotating said impeller about said axis;

a plurality of diamagnets axially fixed with respect to said impeller and radially fixed with respect to said housing; and

a plurality of permanent magnets axially fixed with respect to said housing and radially fixed with respect to said impeller, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

47. The fluid pump of claim 46 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

48. The fluid pump of claim 46 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the

fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

49. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a rotatable impeller disposed in said pumping chamber for rotation about an axis;

a polarized electromagnetic means associated with said impeller and said housing for rotating said impeller about said axis;

a plurality of diamagnets radially fixed with respect to said impeller and axially fixed with respect to said housing; and

a plurality of permanent magnets radially fixed with respect to said housing and axially fixed with respect to said impeller, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

50. The fluid pump of claim 49 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

51. The fluid pump of claim 49 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

52. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a central frame fixed with respect to said housing and disposed in said pumping chamber;

a rotatable impeller disposed in said pumping chamber for rotation about said central frame;

a polarized electromagnetic means associated with said housing and said impeller for rotating said impeller about said central frame;

a plurality of diamagnets fixed with respect to one of said impeller and central frame; and

a plurality of permanent magnets fixed with respect to one of said central frame and said impeller, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby

stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

53. The fluid pump of claim 52 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

54. The fluid pump of claim 52 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

B4 55. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a central frame fixed with respect to said housing and disposed in said pumping chamber;

a rotatable impeller disposed in said pumping chamber for rotation about said central frame;

a polarized electromagnetic means associated with said housing and said impeller for rotating said impeller about said central frame;

a plurality of diamagnets fixed with respect to said central frame; and

a plurality of permanent magnets fixed with respect to said impeller, such that each said permanent magnet is disposed in magnetic communication with

a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

56. The fluid pump of claim 55 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

57. The fluid pump of claim 55 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

58. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a central frame fixed with respect to said housing and disposed in said pumping chamber;

a rotatable impeller disposed in said pumping chamber for rotation about said central frame;

a polarized electromagnetic means associated with said housing and said impeller for rotating said impeller about said central frame;

a plurality of diamagnets axially fixed with respect to said impeller and radially fixed with respect to said central frame; and

a plurality of permanent magnets axially fixed with respect to said central frame and radially fixed with respect to said impeller, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

59. The fluid pump of claim 58 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

60. The fluid pump of claim 58 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

61. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a central frame fixed with respect to said housing and disposed in said pumping chamber;

a rotatable impeller disposed in said pumping chamber for rotation about said central frame;

a polarized electromagnetic means associated with said housing and said impeller for rotating said impeller about said central frame;

a plurality of diamagnets radially fixed with respect to said impeller and axially fixed with respect to said central frame; and

a plurality of permanent magnets radially fixed with respect to said central frame and axially fixed with respect to said impeller, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

62. The fluid pump of claim 61 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

63. The fluid pump of claim 61 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

64. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a central frame fixed with respect to said housing and disposed in said pumping chamber;

a rotatable impeller disposed in said pumping chamber for rotation about said central frame;

a polarized electromagnetic means associated with said housing and said impeller for rotating said impeller about said central frame;

a plurality of diamagnets fixed with respect to one of said impeller, said central frame, and said housing; and

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a plurality of permanent magnets fixed with respect to one of said impeller, said central frame, and said housing, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

65. The fluid pump of claim 64 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

66. The fluid pump of claim 64 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting

fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces

67. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a central frame fixed with respect to said housing and disposed in said pumping chamber;

a rotatable impeller disposed in said pumping chamber for rotation about said central frame;

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a polarized electromagnetic means associated with said housing and said impeller for rotating said impeller about said central frame;

a plurality of diamagnets fixed with respect to said impeller; and

a plurality of magnet means radially fixed with respect to said central frame and axially fixed with respect to said housing, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

68. The fluid pump of claim 67 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

69. The fluid pump of claim 67 further comprising means at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

70. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

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a central frame fixed with respect to said housing and disposed in said pumping chamber;

a rotatable impeller disposed in said pumping chamber for rotation about said central frame;

a polarized electromagnetic means associated with said housing and said impeller for rotating said impeller about said central frame;

a plurality of diamagnets fixed with respect to said impeller; and

a plurality of magnet means axially fixed with respect to said central frame and radially fixed with respect to said housing, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of

diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

71. The fluid pump of claim 70 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

72. The fluid pump of claim 70 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

73. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a central frame fixed with respect to said housing and disposed in said pumping chamber;

a rotatable impeller disposed in said pumping chamber for rotation about said central frame;

a polarized electromagnetic means associated with said housing and said impeller for rotating said impeller about said central frame;

a plurality of permanent magnets fixed with respect to said impeller; and

a plurality of diamagnets radially fixed with respect to said central frame and axially fixed with respect to said housing, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

74. The fluid pump of claim 73 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

75. The fluid pump of claim 73 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.

76. A fluid pump comprising:

a housing defining a pumping chamber, a pumping chamber inlet port and a pumping chamber outlet port;

a central frame fixed with respect to said housing and disposed in said pumping chamber;

a rotatable impeller disposed in said pumping chamber for rotation about said central frame;

a polarized electromagnetic means associated with said housing and said impeller for rotating said impeller about said central frame;

a plurality of permanent magnets fixed with respect to said impeller; and

a plurality of diamagnets axially fixed with respect to said central frame and radially fixed with respect to said housing, such that each said permanent magnet is disposed in magnetic communication with a diamagnet and oriented one of generally axially and radially with said diamagnet, whereby the plurality of permanent magnets are oriented generally axially and radially with said plurality of diamagnets to thereby stabilize the impeller in both the axial and radial directions by magnetic forces levitating said impeller.

77. The fluid pump of claim 76 wherein said impeller has a density substantially similar to the density of the fluid pumped by said fluid pump.

78. The fluid pump of claim 76 further comprising at least one of means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed radial directions toward the impeller and means for conducting fluid from the peripheral region of the impeller and discharging the fluid in opposed axial directions toward the impeller, whereby said impeller is levitated in at least one of said axially and radially directions by fluid forces.